

CLAIMS

I/We claim:

- [c1] 1. A method for handling aircraft operator inputs, comprising:
receiving an input from an aircraft operator at an aircraft flight deck;
comparing a characteristic of the input to at least one target value for the
characteristic;
if the characteristic of the input differs from the at least one target value for
the characteristic by at least a threshold amount, displaying an
assistance message to the aircraft operator, the assistance message
including at least one of a complying input and an instruction for
creating a complying input.
- [c2] 2. The method of claim 1 wherein displaying an assistance message
includes displaying an assistance message at least proximate to and
simultaneously with displaying the input.
- [c3] 3. The method of claim 1 wherein receiving an input includes receiving
an input that includes alphanumeric characters.
- [c4] 4. The method of claim 1, further comprising activating the input if the
characteristic of the input does not differ from the at least one target value, or
differs from the at least one target value by less than the threshold amount.
- [c5] 5. The method of claim 1, further comprising presenting the input at an
active display field if the characteristic of the input does not differ from the at least
one target value, or if the characteristic of the input differs from the at least one
target value by less than the threshold amount.

- [c6] 6. The method of claim 1, further comprising activating the input if the characteristic of the input does not differ from the at least one target value, or if the characteristic of the input differs from the at least one target value by less than the threshold amount, and wherein activating the input includes directing a change in a characteristic of the aircraft.
- [c7] 7. The method of claim 1, further comprising activating the input if the characteristic of the input does not differ from the at least one target value, or if the characteristic of the input differs from the at least one target value by less than the threshold amount, and wherein activating the input includes directing a change in at least one of a speed, altitude and flight path of the aircraft.
- [c8] 8. The method of claim 1 wherein comparing a characteristic includes comparing a format of the input to a target format.
- [c9] 9. The method of claim 1 wherein comparing a characteristic includes comparing a number of characters in a character string to a target number of characters.
- [c10] 10. The method of claim 1 wherein comparing a characteristic includes comparing a type of character in a character string to a target type of character.
- [c11] 11. The method of claim 1 wherein comparing a characteristic includes comparing a numerical value to a target numerical value.
- [c12] 12. The method of claim 1 wherein displaying a message includes displaying a plurality of sample complying inputs.

- [c13] 13. The method of claim 1, further comprising displaying the same assistance message for all non-complying inputs provided to fulfill data requests of a predetermined type.
- [c14] 14. The method of claim 1, further comprising displaying a first assistance message for all non-complying inputs provided to fulfill data requests of a first type; and displaying a second assistance message different than the first assistance message for non-complying inputs provided to fulfill data requests of a second type different than the first type.
- [c15] 15. The method of claim 1, further comprising: providing a first assistance message if the input fails to comply with the target characteristic on a first basis; and providing a second assistance message different than the first assistance message if the input fails to comply with the target characteristic on a second basis different than the first basis.
- [c16] 16. The method of claim 1 wherein displaying an assistance message includes displaying multiple criteria associated with a complying input.
- [c17] 17. The method of claim 1 wherein displaying an assistance message includes displaying an indication of a single criterion associated with a complying input when the input received at the aircraft flight deck fails to comply with the single criterion.
- [c18] 18. The method of claim 1 wherein displaying the assistance message includes displaying at least one of a number of characters for a complying input, at least one alphabetic character for a complying input, and at least one numerical character for a complying input.

- [c19] 19. The method of claim 1 wherein a complying input includes a data element and a modifier, and wherein displaying the assistance message includes indicating the position of the modifier relative to the data element for a complying input.
- [c20] 20. The method of claim 1, further comprising:
receiving a request for a change in a characteristic of the assistance message; and
changing the characteristic of the assistance message.
- [c21] 21. The method of claim 1, further comprising:
displaying the input at a first location of the aircraft flight deck; and
displaying the assistance message at a second location of the aircraft flight deck, the second location being at least proximate to the first location.
- [c22] 22. The method of claim 1 wherein the input includes a first input, and wherein the method further comprises:
receiving a second input, the second input being a complying input; and
ceasing to display the assistance message after receiving the second input.
- [c23] 23. The method of claim 1 wherein displaying the assistance message includes displaying the assistance message at a multi-function display of the aircraft flight deck.
- [c24] 24. A method for handling aircraft operator inputs, comprising:
receiving an input from an aircraft operator at an aircraft flight deck, the input corresponding to a string of alphanumeric characters;
displaying the input;

comparing a characteristic of the input to at least one target value for the characteristic;

if the characteristic of the input differs from the at least one target value for the characteristic by at least a threshold amount, displaying an assistance message to the aircraft operator simultaneously with displaying the input and at least proximate to the input, the assistance message including at least one of a complying input and an instruction for creating a complying input; and

if the characteristic of the input does not differ from the at least one target value, or differs from the at least one target value by less than the threshold amount, activating the input.

[c25] 25. The method of claim 24 wherein activating the input includes presenting the input at an active display field.

[c26] 26. The method of claim 24 wherein comparing a characteristic includes comparing a format of the input to a target format.

[c27] 27. The method of claim 24 wherein comparing a characteristic includes comparing a number of characters in a character string to a target number of characters.

[c28] 28. The method of claim 24 wherein comparing a characteristic includes comparing a type of character in a character string to a target type of character.

[c29] 29. The method of claim 24 wherein comparing a characteristic includes comparing a numerical value to a target numerical value.

[c30] 30. The method of claim 24 wherein displaying a message includes displaying a plurality of sample complying inputs.

- [c31] 31. The method of claim 24 wherein the input includes a first input, and wherein the method further comprises:
receiving a second input, the second input being a complying input; and
ceasing to display the assistance message after receiving the second input.
- [c32] 32. The method of claim 24 wherein displaying the assistance message includes displaying the assistance message at a multi-function display of the aircraft flight deck.
- [c33] 33. A system for handling aircraft operator inputs, comprising:
a receiving portion configured to receive an input from an aircraft operator at an aircraft flight deck;
a comparing portion operatively coupled to the receiving portion to compare a characteristic of the input to at least one target value for the characteristic; and
a display portion operatively coupled to the comparing portion to direct a display of an assistance message to the aircraft operator if the characteristic of the input differs from the at least one target value for the characteristic by at least a threshold amount, the assistance message including at least one of a complying input and an instruction for creating a complying input.
- [c34] 34. The system of claim 32 wherein the receiving portion, the comparing portion and the display portion include computer-readable media.
- [c35] 35. The system of claim 32, further comprising a display device operatively coupled to the display portion to display the input and the assistance message.

[c36] 36. The system of claim 32, further comprising a multifunction display device operatively coupled to the display portion to display the input and the assistance message.

[c37] 37. The system of claim 32, further comprising an aircraft, the aircraft housing the receiving portion, the comparing portion and the display portion.

[c38] 38. A computer-readable medium for handling aircraft operator inputs by performing a method, comprising:

receiving an input from an aircraft operator at an aircraft flight deck;
comparing a characteristic of the input to at least one target value for the characteristic;

if the characteristic of the input differs from the at least one target value for the characteristic by at least a threshold amount, displaying an assistance message to the aircraft operator, the assistance message including at least one of a complying input and an instruction for creating a complying input.

[c39] 39. The computer-readable medium of claim 38 wherein displaying an assistance message includes displaying an assistance message at least proximate to and simultaneously with displaying the input.

[c40] 40. The computer-readable medium of claim 38 wherein the method further comprises activating the input if the characteristic of the input does not differ from the at least one target value, or differs from the at least one target value by less than the threshold amount.

[c41] 41. The computer-readable medium of claim 38 wherein the method further comprises activating the input if the characteristic of the input does not differ from the at least one target value, or if the characteristic of the input differs

from the at least one target value by less than the threshold amount, and wherein activating the input includes presenting the input at an active display field.

[c42] 42. The computer-readable medium of claim 38 wherein comparing a characteristic includes comparing a format of the input to a target format.

[c43] 43. The computer-readable medium of claim 38 wherein comparing a characteristic includes comparing a number of characters in a character string to a target number of characters.

[c44] 44. The computer-readable medium of claim 38 wherein comparing a characteristic includes comparing a type of character in a character string to a target type of character.

[c45] 45. The computer-readable medium of claim 38 wherein comparing a characteristic includes comparing a numerical value to a target numerical value.

[c46] 46. The computer-readable medium of claim 38 wherein the method further comprises displaying the same assistance message for all non-complying inputs provided to fulfill data requests of a predetermined type.

[c47] 47. The computer-readable medium of claim 38 wherein the method further comprises:

 displaying a first assistance message for non-complying inputs provided to fulfill data requests of a first type; and

 displaying a second assistance message different than the first assistance message for non-complying inputs provided to fulfill data requests of a second type different than the first type.

[c48] 48. The computer-readable medium of claim 38 wherein the method further comprises:

providing a first assistance message if the input fails to comply with the target characteristic on a first basis; and
providing a second assistance message different than the first assistance message if the input fails to comply with the target characteristic on a second basis different than the first basis.

[c49] 49. A system for handling aircraft operator inputs, comprising:
receiving means for receiving an input from an aircraft operator at an aircraft flight deck;
comparing means for comparing a characteristic of the input to at least one target value for the characteristic; and
display means for directing a display of an assistance message to the aircraft operator if the characteristic of the input differs from the at least one target value for the characteristic by at least a threshold amount, the assistance message including at least one of a complying input and an instruction for creating a complying input.

[c50] 50. The system of claim 49 wherein the receiving means, the comparing means and the display means include computer-readable media.

[c51] 51. The system of claim 49, wherein the display means includes a display device for displaying the input and the assistance message.

[c52] 52. The system of claim 49, further comprising an aircraft housing the receiving means, the comparing means and the display means.